

MISCELLANEOUS NOTES ON INDIAN BUTTERFLIES

BY

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The main purpose of these notes is to shew that the recorded distributions of several of the butterflies of our region, (*vide* below), are too circumscribed, but I have also included other information, e.g. as to habitats, habits, etc., and some descriptions of some hitherto unknown or undescribed subspecies and sexes, which will, I trust, prove of interest to collectors.

'Our region' comprises the whole of India and Pakistan, Burma and Ceylon, (excluding the Andaman and Nicobar Islands), and my observations do not include the Hesperiidæ.

Attention is invited to the following new information:—

Descriptions of the females of *Papilio polyctor stockleyi* Gabriel, *Eurema simulatrix sarinoides* (Frühstorfer), *Dodona henrici longicaudata* De Niceville, Dry Season Form, and *Rapaia abnormis* Elwes; descriptions of *Lycaenopsis ceyx cerima* Corbet¹, male, *Amblypodia* ?spec. nov., male, and *Horaga amethystus purpurascens* Corbet, male and female.

I am very happy to acknowledge the valuable and ungrudging help received from Brig. W. H. Evans, C.S.I., D.S.O., etc., at the British Museum, who was always ready to assist me with the identification of doubtful species and races, and the great help afforded by Dr. H. A. Baylis, M.A., D.Sc., lately Dy. Keeper of Zoology at the British Museum (Natural History), who examined for me the androconia of several specimens of sundry species of *Lycaenopsis*, notably *argiolus sikkima* Moore and *jyneana* De Niceville, which were treated as separate species in the 2nd edition of Evan's 'Identification', but now, as an off-shoot of these examinations, are regarded by him as one and the same species, namely *argiolus jynteana* De Niceville.

These notes were commenced prior to the partition of India and Pakistan, but, for sundry reasons, I was unable to complete them until recently. Wherever, therefore, the context admits, 'India' must be understood as including 'Pakistan' and Provinces such as Bengal and the Punjab as covering the Provinces of these names in the days of British India.

The nomenclature adopted is that given in the Fauna of British India, Butterflies (2nd edition) by Talbot, for the families Papilionidae, Pieridae, Danaidae, Satyridae, Amathusiidae, and Acraeidae, and that employed in Evans's 'Identification', 2nd edition, for the Nymphalidae, Erycinidae and Lycaenidae.

¹ This insect has recently been described by Dr. T. Norman, in Vol. 51, No. 2, of the Society's journal, from a male taken in Assam, but I took my specimens in 1939 and wrote my description before the discovery of the insect in Assam and am therefore including it here, for what it is worth.

***Atrophaneura priapus egertoni* (Distant).**

While collecting around the Bwabin Tin Mine, near Wagon, about 20 miles east of Tavoy, S. Burma, early in 1939, I saw flying toward me what I at first took to be a worn female of *Papilio memnon agenor* Linnaeus, but noticed something unusual in its appearance as it approached me and took it, when, to my surprise, it proved to be a female of *priapus egertoni*, with, alas, the torn parts of the hind wings torn off, probably by a lizard; these creatures spoil for the collector many a freshly-emerged butterfly in Burma, in that manner. The butterfly has hitherto only been recorded from the Mergui Archipelago, but will probably be found to inhabit the hilly country from Tavoy to the extreme south of Burma. I also saw a female ovipositing in a forest near Mergui, in January 1939, but it never came within reach of my net or indeed to below about 30 ft. from the ground.

***Atrophaneura aristolochiae aristolochiae* (Fabricius).**

I once took a rather worn specimen in a garden in Hyderabad (Deccan), which shows no sign of any reddish or white spots on the hind wing. I can find no other record of the capture of such an individual form.

***Atrophaneura latreillei latreillei* (Donovan).**

Talbot states 'more common in Mussoorie than elsewhere. Only found at high elevations between 7,000 and 9,000 ft.' My collector took it in the neighbourhood of Chungthang, in the Tista Valley in Sikkim, at about 5,000 to 6,000 ft. in such quantities that if it is commoner in Mussoorie it must positively swarm there. I also took a few specimens in the same locality towards the end of May, 1943.

***Papilio polyctor stockleyi* Gabriel.**

Talbot states 'The Dawna Range southwards . . . Only 2 males at present known, both in the British Museum.' I was fortunate enough to take a female, unluckily in very damaged condition, in Kalaw, S. Shan States, in June 1939. It is indistinguishable from the (description of the) male, save that the green stippling of the upperside of the forewing is less dense and the shape of the wings is broader than those of the male. The range of the insect must be extended to at least the S. Shan States in N. Burma.

***Papilio arcturus arcturus* Westwood.**

This insect is generally rather constant in coloration and markings but I have a male of the dry season form, taken towards the end of May, 1944, near Chungthang, Tista Valley, at about 5,000 ft., which is markedly smaller than the average, the green band on the forewing upperside being broad and outwardly diffuse and tinged with yellow. The greenish patch on the hind wing upperside is broader and much greener than usual and there is a prominent claret band, not separate lunules, postdiscally in interspaces 1 a to 4, u.p.h. The specimen looks rather like a hybrid between *krishna krishna* Moore and *arcturus arcturus* Wd. Could that be what it is?

Papilio krishna krishna Moore.

Talbot states that this insect frequents bare places on mountains where the slopes are covered with forests of chestnut, oak and magnolia. The male however also drinks at puddles and sandy patches on paths and roads through forests, like its congeners.

Papilio crino Fabricius.

Talbot says that this species occurs in Ceylon, Peninsular India and lower Bengal, being rather common in the plains. In my experience, it is extremely rare in Hyderabad (Deccan) and distinctly uncommon near Calcutta.

Papilio dravidarum Wood-Mason.

Talbot states that the male is usually common and that the insect is common on the western slopes of the Nilgiris, while T. R. Bell, quoted by him, says that in Kanara it is not often seen at flowers. I found the insect fairly common at the foot of the Lakkidi Ghat, leading from the Nilgiri Wynaad to the Calicut district, in early August, 1929, during an extremely wet spell. The males came eagerly to flowers whenever the rain abated for a minute or two and the females less frequently.

Papilio polytes romulus Cramer.

Mr. D. G. Sevastopoulo, in a note, if I remember right, in your journal in or about 1942, stated that in breeding experiments he found the female form *cyrus* Fabr. as common as the other forms. Both Evans and Talbot state that this form is rare or the least common of the female forms, and my experience confirms this. I was constantly on the look-out for the *cyrus* form in Calcutta but found very few, although I was able to distinguish the female from the male when the insect is sipping nectar from a flower; and, although I reared several larvae, taken at random, of this species on several occasions, I never succeeded in obtaining a *cyrus* form in that manner. Could Mr. Sevastopoulo have struck an unusually high percentage of *cyrus* forms?

Teinopalpus imperialis imperialis Hope.

I found a few of these insects flying fast and high around the 'Observatory' on Tiger Hill, near Darjeeling, in June 1943, in the sunshine. As soon as a cloud or mist obscured the sun, they would fold their wings back and drop like stones usually on to small bushes in the vicinity, but even on to the grass in the Observatory enclosure; they would sit tight at rest and be very difficult to see owing to the coloration of the undersides, until the sun emerged again. While thus at rest they could be taken with the fingers.

PARNASSIINAE

Talbot remarks on p. 259 of Vol. 1: 'The classification of a number of the Indian forms is still in a state of uncertainty, owing to the lack of material. In the present volume, several forms are

treated as races upon a consideration of the distribution: such treatment is provisional, and the acquisition of more material is much to be desired in order to obtain a more accurate conception of these forms.'

He also says, *vide* p. vi of the Author's preface in the same volume, that there is much confusion in the genus *Parnassius*, and this is unlikely to be cleared up until more intensive collecting can be done in the higher Himalayan valleys and adequate data obtained: it is not enough to have the name of a locality and the month of capture; it is important to know what forms actually fly on the same ground.

In view of these remarks, the following observations from my own rather limited experience may be of some interest, even though *per se* they throw little light on the subject.

I made a collecting trip in the summer of 1939 from Srinagar to Gilgit via the Burzil Pass and on to the Shandur Lake, whence I entered Chitral and travelled N.E. to the Baroghil Pass, crossing the Darkot Pass a little further on into Yasin and so back via Gilgit and the Kamri Pass to Srinagar. References in the following items to butterflies occurring within this area are therefore concerned with this trip, unless otherwise stated.

I crossed the Rajdiyanagan Pass, 11,900 ft., slightly beyond Tragbal, on July 9th, but found no *Parnassiids* on or near the Pass either on my outward, or return journey on the 16th September.

I collected around and above the Burzil Pass on the 14th to 17th July inclusive. On the sunny slopes above the pass and in the valley leading to the pass from the south, I found a few *P. hardwickei* *hardwickei* Gray at from about 12,000 to 13,000 ft., but nearly all were worn, and it would therefore appear that they must begin to emerge in this locality before the end of June. *P. charltonius* *?deckerti* Verity was fairly common and in reasonably good condition from about 13,000 to 14,500 ft., but, as usual, difficult to capture. *P. stoliczkanus nicevillei* Avinoff was moderately common from about 13,500 to 15,000 ft. but it was difficult to find fresh specimens. *P. epaphus* *?hinducucica* Bang-Haas and *P. simo* ssp. were flying uncommonly from about 14,500 to 16,000 ft., the former on the grassy slopes near the snow-fields and the latter on slopes covered by loose, grey, shale, where they were difficult to see when settled, and to catch owing to the slippery nature of the shale. *P. epaphus* were freshly emerged and I saw no females, but *P. simo* were nearly all very worn and must have been on the wing for two or three weeks. This insect has not been recorded from this locality previously; it seems nearest to ssp. *saserensis*. All the last named four can be found flying together in some parts of their range and season. *P. jacquemontii* *jacquemontii* Boisduval was not in evidence on this occasion. Two males of the *P. simo* were presented by me to the British Museum.

I arrived at the Shandur Lake, (about 12,000 ft.) on the evening of the 6th August and collected in the neighbourhood from the 7th to the 11th of that month inclusive.

I had come across a few worn specimens of *P. tianschanica* *binghami* Bryk on the 'road' from Teru to Shandur, at about 11,000 ft., on the 6th, and those that I found on the borders of the

lake were in very poor condition; but on the slopes above the lake, to the west, the same species was fairly common and fresh, from about 13,000 to 14,000 ft. A fair number of *P. charltonius ducalis* Boullet & Le Cerf in fair condition, were flying at about 13,000 to 14,000 ft. also, in company with the *tianschanica*'s while *P. delphiuss chitralica* Verity were common at from 13,500 to 15,000 ft., but very few were found, out of a large number taken, to be in good enough condition to be worth keeping. *P. epaphus hinducica* Bang-Haas were rare but freshly emerged at about 14,500 to 15,500 ft. and upwards. These four subspecies therefore all fly simultaneously for some part of their season and range and at similar or overlapping altitudes.

I reached the Baroghil hut, near the pass of that name, on the 20th August and spent three days collecting in the neighbourhood. The slopes south of the river which flows down below the hut, facing north and leading up to above the Darkot Pass, provided good hunting, and I found *P. jacquemontii chitralensis* Moore in numbers and fairly fresh condition there at about 12,500 to 13,500 ft. *P. delphiuss* ssp. occurred quite commonly from about 13,000 to 15,000 ft. and even upwards, but most frequently between 14,000 and 15,000 ft. I captured a large number, but 75% were worn specimens and had to be released; I was, however, able eventually to secure a fair series. The subspecies occurring here seems to approach (the description of) race *hunza*, especially in the reduced discal markings, but Brig. Evans, on a comparison of a series of my specimens with the British Museum's series of ssp. *chitralica* and *hunza*, considered that mine were probably a seasonal form of the former. In view of the time of their capture and the small amount of the SW. monsoon rainfall in these parts, they may well have been a second dry-season brood, the earlier brood, if one exists, being more like a wet-season form emerging while the ground is saturated with the recently melted snows. I presented two males and two females to the British Museum and, perhaps, when the genus is revised a more definite view may be expressed. The only other Parnassiids I found in this locality were a few very elderly, worn, pale specimens of *P. thianschanica*, which seemed to be too faded to be worth taking. I had at the time only Evans's 'Identification', 2nd edition, in which the species is not split into any races in the Indian area, but, on obtaining later a copy of Talbot's Fauna of British India, 2nd edition, I wondered whether these specimens could have been another race and regretted that I had kept none. They were only seen at about 12,000 to 12,500 ft.

I crossed the Kamri Pass, on my way back, on the 13th September in a snow blizzard, but revisited the Pass the following day in fine weather. I saw no butterflies there, except one worn *Lampides boeticus*!

Talbot, in a note on *Maniola hilaris* on page 266 of the 2nd edition of the Fauna, Vol. 2, seems to imply that the slopes on the northern side of the Darkot Pass are not in Indian territory, but if he refers to the slopes which divide the two great glaciers which join to form the summit of the Pass, where I took the Parnassiids mentioned, he is surely wrong; for these slopes lie to the north of

the pass and face more or less north, but are south of the river which divides the Thui Range from the Hindu Kush, in which the Baroghil Pass is situated.

On the track from the Baroghil Pass to the eastern arm of the glacier leading to the Darkot Pass, at about 12,000 to 12,500 ft. and on the western moraine of the glacier, up to about 13,500 ft., the only Parnassiids seen by me were a few worn *P. charltonius* (?) *ducalis*.

Aporia agathon ariaca

Talbot states that this race is known chiefly from Naini Tal and is not common. In May 1945 I found it plentiful on the road from Almora to Bhinsar, and in June of that year it positively swarmed in one locality on the old short bridal path from Naini Tal to Bhowali. Every thistle head and several other flowers had three or four of these butterflies clustered on them. They should therefore be classified probably as very common but rather local.

Delias singhapura singhapura

On a path to the top of the hill on Pataw Island, opposite Mergui, I was watching a pair of *Delias* butterflies flying around among the foliage of some tall trees when they began to indulge in a love flight and fell entwined just in front of me and I was able to capture them. They proved to be specimens of the rare species named. They seem to have the habit of several of the genus, of flying about the tops of trees or resting on the leaves near the tops during the heat of the day.

Delias sanaca sanaca, form confusa

Talbot says that from *confusa* is rare and may be said to range from Kulu to Kumaon; he states that the description of the female given by him is the first record of the female of this form, being taken from the insect found by Lt.-Col. H. D. Peile dead on the ground at Mussoorie, at 5,500 ft., in May 1916. Towards the end of May 1945, at Bhinsar, in the Almora District, and in the first half of June of the same year around Naini Tal, I found what agrees with the description of this form common, the females scarcely less plentiful than the males. Both sexes spent a good deal of time during the heat of the day flying high around trees, where they were inaccessible, but they also haunted shady nalas and streams, especially in the afternoon, and seemed to enjoy sitting on the mossy banks of the latter, where they received a sprinkling of cool spray. Moreover, I was sent a few specimens of this subspecies in two or three successive years by a friend from Naini Tal and it would appear that form *confusa* is now the commonest, and in fact the normal, form in Kumaon.

Delias acalis pyramus (Wallace).

Under the *species*, Talbot gives the distribution as '... Simla to Burma . . .', but under the subspecies *pyramus*, the northern race, he shows the habitat as Nepal to Burma. Evans gives the distribution of this race as Simla to Burma. I have not taken it or

received it from west of Sikkim, (I exclude Nepal, as it is not within our area,) and it would be interesting to know which habitat is correct.

Delias agostina agostina (Hewitson).

Talbot says it occurs from 3,000 to 8,000 ft. It can be taken quite commonly along the Tista Valley, in the Darjeeling District, at 1,000 ft. and upwards to about 3,000 ft., but I have never come across it above that altitude.

Delias hyparete ethire Doherty.

Talbot says it is more common in the Madras district but recorded by Taylor (1888) as being very common at Khurda, in Orissa. I can confirm that this subspecies occurs at Khurda, in Orissa. I also found it rather uncommon at Taptapani near Berhampore, in the Eastern Ghats, but I searched for it in vain around Calcutta. That does not prove that it does not occur in Bengal, but presumably it is confined to the south of the Province. I also found it rarely in and around Hyderabad (Deccan).

Cepora nadina remba (Moore).

Talbot says it does not usually frequent flowers and rarely rests on leaves in open places, so that it is not easy to catch, but at Mahableshwar in February 1946, I found the males commonly, and the females rarely, on flowers and leaves beside the broad drives through the forests, and the males frequented damp, sandy spots in stream beds along with *nerissa phryne*, its congener.

Appias indra indra (Moore).

The males congregate commonly at damp places in stream beds and, when disturbed, delight to play follow-my-leader in circles around the place where they were sitting, until they deem it safe to resume their sipping. Other species are recorded as indulging in the same habit.

Pieris krueperi devta (de Niceville).

I took a few specimens of this insect in late July and August, on my trip previously mentioned, in Gilgit and Chitral at elevations of about 9,000 to 12,000 ft. They were nowhere common and I seldom saw more than one or two in a day. They seemed to float down the hill-sides to flowers beside the 'road', between 11 a.m. and 1 p.m., and thereafter to disappear up the rather barren slopes above it. When settled, their blotchy undersides made them very difficult to spot and they never gave one a second chance if missed.

Pieris dubernardi chumbiensis (de Niceville).

I note that Talbot follows previous authors in regarding the Chumbi Valley as situated in Sikkim. It surely lies wholly east of the Donkya Range, which separates Sikkim on the east from Tibet, and is therefore in that country. If this assumption is correct, several

species hitherto classified as 'Indian' must be excluded from that category, e.g., *Pieris napi melaena*, *Aulocera brahminus brahminus*.¹ *Vanessa antiopa yedanula*, etc., and some *Lycaenids*.

***Euchloe ausonia daphalis* (Moore).**

Brig. Evans, quoted by Talbot, notes that this insect is fairly common in Chitral in March and April, between 5,000 and 8,000 ft.; and says:—'It is local and has one brood, which . . . appears in the latter half of April'. I took a freshly emerged male near the Burzil dak bungalow in mid-July 1939 at about 11,000 ft. but failed to find any more. Was this a member of a second brood or merely one whose emergence had been delayed by the severer conditions prevailing at that altitude?

***Catopsilia pyranthe pyranthe* (Linnaeus) and *C. florella gnoma* (Fabricius).**

The uncertainty as to whether these are one and the same species, with *florella* only the dry-season form of *pyranthe*, has apparently not yet been dispelled. Talbot records that the dated specimens in the British Museum (of *florella*) were taken from December to April, whilst those of *pyranthe* were taken from June to December, and is inclined to think that they are seasonal forms.

I have series of dry-and-wet season forms of both 'species' from several localities in the plains of India, but the *pyranthe*-like specimens are far the commoner in the monsoon months and the *florella*-like specimens much the more plentiful in the dry months. I have also taken dry-season-like forms during the monsoon months and wet-season-like forms during the dry months, especially in places such as Calcutta where long periods of unbroken drought are exceptional. My experience therefore tends to support the assumption that these are separate species, but it admittedly proves nothing!

***Gandaca harina assamica* Moore.**

I took a few specimens of this butterfly, none of which was in perfect condition, at Christmas and in early January, at Taptapani, Ganjam, (*vide* under *hyparete ethire* above), on two visits of a few days each to Gopalpur. It has not, I believe, been recorded previously except from Sikkim to Assam. The differences between these specimens and specimens in my collection from Sikkim are very slight, the black border being a little broader at the apex of the forewing upperside, in the former, and not continued quite so far down the termen, ending generally above vein 3 and becoming thread-like about vein 5 in the male and ending well above vein 1 in the female, which is faintly tinged with yellow. Brig. Evans, to whom I showed my series from Taptapani, considered that they were not sufficiently differentiated to constitute a good separate subspecies, but it would be interesting to know whether this view can be upheld when more material is available for comparison.

¹ *Brahminus* is also found in other parts of the Indian Himalaya.—Eds.

Eurema simulatrix sarinoides (Frühstorfer)

I took a fair series of this insect, including a few females, in November-December 1938 and January-February 1939, in Tavoy, Mergui, and the eastern foot of the Dawna Hills near Thingannya-naung. I showed them to Brig. Evans at the British Museum, and he confirmed that they were undoubtedly this subspecies. Talbot says, (December 1938), that the female of this butterfly does not appear to be known and there were no females of it in the British Museum collection in 1947. I therefore presented a pair to the Museum and presume that the female is the allotype. Subsequently a report of the discovery of the female in Arrakan appeared in a list of Arrakan Butterflies, by J. C. Gladman, in the *Journal of the Bombay N.H.S.* in 1948, I believe, but cannot now trace the correct reference. I was particularly on the look-out for this insect during my collecting trip in Burma from November 1938 to early June 1939, and was glad to have come across it on several occasions. I consider that it is not as rare as it has been thought to be, but is liable to be overlooked owing to its similarity in the field to other species of the genus, and, especially when settled, to wet season forms of *blanda silhetana* and *sari sodalis*.

It is evident from the above that my specimens were all taken in the dry season, but all have well marked and fairly broad black borders on the hind-wing upperside, distinctly scalloped anteriorly and intensely black in the males. (*pace* Talbot, who figures and describes what must be an extreme dry season form). The female very closely resembles the male but, on the upperside, the black of the borders is less intense than in the males, the ground colour slightly paler and the forewing slightly broader. The markings and colour of the underside are indistinguishable from those of the male.

Colias alpherakii chitralensis Verity.

When I reached the Shandur Lake (on August 6th), I was too late to find this insect in good condition especially at the lake level. The few I saw were very old and worn; but higher up the slopes above the lake, to about 14,000 ft., I came across ones or twos, mainly females, in fair condition. Also on the 4th August I took a female near Ghizar Fort, about 20 miles from the Shandur Pass on the Gilgit side, in poor condition; and I captured another on the slopes leading down from the Darkot Pass towards Darkot, i.e. on the southern side and in Yasin, N. Gilgit, at about 13,000 ft., on the 24th August, also very worn. This butterfly may therefore now be recorded as occurring in N. Yasin and W. Gilgit, as well as in Chitral.

Colias wiskotti wiskotti Staudinger & Bang-Haas.

On the same day and within a few minutes of taking *C. alpherakii chitralensis* near Ghizar (*vide* above), I captured a very common female of *wiskotti*. It appears to occur, therefore, in W. Gilgit, as well as in Chitral. I did not find this insect near the Shandur Lake and next came across it near the Baroghil Pass, (NE. Chitral), at about 12,500 ft. and along the track from the Baroghil Hut to the

foot of the eastern arm of the glacier leading to the Darkot Pass. I was too late to find any in good condition; the few I saw and took were lamentably elderly and worn.

***Colias electo fieldii* Menetries.**

Near Shankergarh on the road to the north side of the Kamri Pass, at about 11,000 ft., on the 11th September 1939, I took a fresh male of this insect, the ground colour of which was a deep gamboge yellow instead of the normal orange. It was otherwise indistinguishable from the usual form.

***Danaus melanippus indicus* (Frühstorfer).**

Recorded by Evans and Talbot from Bengal but, at any rate near Calcutta, it is very rare, and in many years there I only saw three or four. I did, however, see a specimen in a casuarina wood near Puri, Orissa, at Christmas time; it settled quite near me and was unmistakable, but in attempting to catch it, I caught my net on a twig and the insect escaped. Orissa may therefore be added to its habitat.

***Danaus aglea aglea* (Stoll).**

Recorded from Ceylon and Southern India to Orissa, but I have found it rare near Calcutta in many years. Bengal should be added to its distribution.

***Euploea mulciber kalinga* Doherty.**

Doherty, quoted by Talbot, says he found this insect common in parts of the Eastern Ghats; but Talbot states that it is rare in collections and that there are no specimens of it in the General Collection at the British Museum. I found a few of both sexes at Taptapani, in the Eastern Ghats west of Berhampur (Ganjam); one at Christmas time, it may be of interest to note.

***Mycalesis igilia igilia* Frühstorfer.**

Recorded by Talbot only from Coorg and Mysore, but I have taken it at Gudalur (on the Mysore side) and on the Nadghani Ghat in the Nilgiris.

***Mycalesis visala visala* Moore.**

Both Evans and Talbot record this insect from Kumaon to Assam, which seems to imply that it is, in northern India, confined to the hill country or its immediate neighbourhood. It occurs, however, commonly in Calcutta and probably thence throughout Bengal northwards to the Himalayas.

***Mycalesis suavolens tytleri* subsp. nov.**

Recorded by Talbot only from Sikkim and Bhutan, whence Evans also records *suavolens suavolens*. However, I took a male above Loharkhet and another at Khati, both places on the route to the Pindari Glacier in Kumaon, at about 5,000 and 7,000 ft. respectively.

Brig. Evans confirmed that these were both *suavoleps* and presumably ssp. *tytleri*. Kumaon must therefore be added to its habitat.

***Mycalesis malsara* Moore.**

Neither Evans nor Talbot record this species from further south in Burma than Rangoon, but I found a few in February 1939 near Tavoy, S. Burma.

Genus *Lethe* Hubner. It is not, in my experience, correct to say, with Talbot, that the butterflies of this genus fly after sunset, but in the day-time they mostly sit motionless among leaves, flying only a few yards when disturbed. Of course, they do so, but they also fly fairly freely around bushes and trees during the day.

***Lethe dura gammiei* (Moore).**

Both Evans and Talbot record this insect as very rare, but I found it, or rather the males, fairly common in Sikkim, at about 4,000 ft. between Gangtok and Dikchu and from Singhik to Chungthang at between 4,000 and 5,000 ft., in May 1943; in fact, it seemed to be about as common as any other *Lethes* at that season and in those localities. My collector also sent me quite a number of males from the same localities in May and June of the two following years, but only one female. I consider that it would be better described as: males not rare, females very rare.

***Lethe rorhia neilgheriensis* (Guerin).**

Hitherto recorded from Ceylon and S. India to Pachmarhi on the western side. I found a male many years ago, in Calcutta, trying to sample my beer at the 9th hole on the Royal Calcutta Golf Course, but despite much searching over several subsequent years, never discovered another in Bengal.

***Lethe margaritae* Elwes.**

Evans gives Bhutan only as the habitat of this species but both Bingham and Talbot record it from Sikkim also. I can confirm its occurrence in Sikkim, as my collector sent me four specimens (two very torn, but two fairly fresh) taken near Chungthang in the Tista Valley, at about 5,000 ft., in June 1944 and 1945.

***Lethe sinorix* (Hewitson).**

Apparently not recorded previously from west of Sikkim, but I have taken it very rarely near Bhowali in the Naini Tal District of Kumaon at about 6,000 ft. in October.

***Lethe yama yama* (Moore).**

Talbot says that this insect is usually rare. I took a few males in late May, 1943, near Chungthang in the Tista Valley at about 5,000 ft., but, judging by the number (of males; not a single female!) sent by my collector from the same neighbourhood in late May and early June in the following two years, it must be extremely common thereabouts.

Maniola hilaris (Staudinger).

Vide my remarks above, under Baroghil, in connection with Parnassiids. I was lucky enough to find a fair number of this species on the same slopes at about 13,000-13,500 ft. on the 21-23 August 1939. The majority were freshly emerged, while others were very worn and faded. It would seem likely that there are two broods in rapid succession in the summer months there.

Maniola davendra chitralica (Evans).

I captured a few specimens of a *Maniola* in late July and again in early September, 1939, in Dashkin Forest, Astor, on the road to Gilgit. The males were identified for me by Brig. Evans as *davendra chitralica*, hitherto recorded only from Chitral and the Khyber Pass, but the females may be either that subspecies or a race of *M. tenuistigma*, (see below), which I found at the same time and place. Neither Evans nor I could distinguish with any certainty between these females. I also took *davendra chitralica* near the Shandur Pass and in N. Yasin, near Darkot, so that its distribution should include these places.

Maniola tenuistigma ssp.

The specimens I took at Dashkin (*vide* above) and at Doyan, (Astor), on the road to Gilgit, were considered by Brig. Evans to be a slightly differentiated local race of *tenuistigma*, which has not been previously recorded from Astor. That applies to the males; the females we could not distinguish with certainty from my females of *tenuistigma laspura* Evans from Chitral, (or from females of *davendra chitralica*, as stated above.) The main differences, however, seem to be the following: Male upperside forewing, brand slightly wider and more woolly in appearance. Veins 1 to 4 darkened distally. Female rather smaller; upperside forewing rather darker towards the dorsai margin. Male and female underside: ocellus in 5 forewing large. In the female, forewing always a small unpupilled ocellus in 2. Hindwing with prominent grey irroration distally, especially towards the costa, where it may become patchy and obscure the ocellus in 5. A very puzzling pair of butterflies!

Hipparchia persephone enervata (Staudinger).

Neither Evans nor Talbot record this insect from Kashmir, but it does occur there, as I took a few, on the 20-22 July, in Astor, N. Kashmir, at 6,000-8,000 ft.

Hipparchia actaea magna (Evans).

Only recorded by Evans and Talbot from Chitral, (up to 9,000 ft.). Rather surprisingly perhaps, therefore, I took a few in rocky country at about 4,500 ft. near the junction of the river which rises on the north side of the Burzil Pass with the Astor River, and a few more near Dashkin and Doyal in Astor, at between 7,000 and 8,500 ft., all in the second half of July.

Hipparchia hubneri pupillata (Tytler).,, **moorei moorei** (Evans).,, **moorei gilgitica** (Tytler).,, **boloricus chitralica** (Tytler).

Talbot states that '*moorei*, *boloricus* and *regeli* (Alph.) form a puzzling group that requires investigation. It is perhaps doubtful whether *boloricus* and *regeli* are distinct species'. I agree that they are puzzling and would include *boloricus* in this opinion. My limited experience is probably unlikely to throw any useful light on the problem, but I give it for what it is worth. I exclude *regeli* as it does not occur in our region. *Huebneri* then I found very rare and only near the Baroghil Pass, at about 10,000 to 12,000 ft. It was quite possibly out of season; it would appear, from the locality, to be ssp. *pupillata* (Tytler). *H. moorei moorei* I found fairly commonly above the Shandur Lake, at about 12,500 to 13,500 ft., and from near Gazan to the Baroghil Pass at round 10,500 to 12,500 ft., *moorei gilgitica*. I took a few below the Darkot Pass to the south, in N. Yasin (Gilgit), at about 13,000 ft. *H. boloricus chitralica* I found common alongside and slightly above the Shandur Lake and near the Baroghil Pass, at altitudes of from 12,000-13,000 ft. Now *boloricus chitralica* seems fairly easy to separate from the others in this group; it has the pale band on the upperside, in both sexes, nearly white and only just tinged with ochraceous, while in the others the band is generally ochraceous, often turning dull yellow about the ocellus in interspace 5.

It will be noticed from the above observations that all these insects, with the possible exception of *gilgitica*, fly in the same localities; they are also on the wing at the same times, except for *pupillata* perhaps, and had this not been the case, I might well have taken better and longer series of them all. The differences shewn in Evans's and Talbot's keys do not seem constant and, although it is possible that the males can be distinguished by their genitalia, that is scarcely practicable with the females, which are extremely difficult to differentiate visually. Further investigation and longer series for examination are, as Talbot says, most desirable.

Erebia hyagriva (Moore).

Talbot describes this insect as rare, despite the fact that according to MacKinnon (1897), whom he quotes, it is *very common* at Mussoorie in August and September. Peile (1937) is also quoted as saying that it is on the wing only during the rains. I have taken one or two at Dharmsala (Kangra District) in May and found it very common, but in poor condition, at Ranikhet (Kumaon) in late September. I feel therefore that Peile's remarks require modification and that the insect's occurrence should be stated as not rare generally and common in the Garhwal and Kumaon hills.

Ypthima baldus madrasa Evans.

An extreme dry season form occurs in February and March in Mahableshtar, which is very small, with prominent dark fasciae on

the underside of the wings, especially the hind wings, distally, and I thought that they might be sufficiently distinct to form a separate race; but I find that they can be matched by other dry season forms from S. India in the collection in the British Museum.

Melanitis leda ismene (Cramer).

On several occasions and over several years, in the monsoon months, sitting after an afternoon round of golf on the Jajmau Course, Cawnpore, on the open grassy patch in front of the club-house, near which was a large tamarind tree, I observed in the early dusk what were unmistakably specimens of this insect, rising from near the foot of the tree and flying leisurely upwards in an ever increasing spiral until they were lost to view high in the sky. One would start the flight and another and another would follow in rapid succession, until it became too dark to watch their movements. Judging by their flight and shape, they were all males, and I could see no sign of females flying high above the tree, so that, if these were courting flights, as presumably they were, the females must have been cruising around for some time at a considerable height. I never saw the butterflies descending from their flights,—presumably it would have been too dark to see this phenomenon when it occurred. It would be interesting to know whether others have witnessed similar behaviour on the part of this crepuscular insect and can offer an explanation thereof.

Elymnias hypermnestra undularis (Drury).

Neither Evans nor Talbot record this insect from south of Bengal, though Bingham gives Central India as a locality. I have taken it rather uncommonly in Hyderabad (Deccan), so that it probably extends through Central India down as far as the Deccan.

Elymnias casiphone saueri Distant.

Evans states that this insect is very rare and Talbot says that the female is very scarce and still may not be known from Burma. I took two females, one below Sukli in the Dawna Hills and the other near Mergui, in November 1938 and January 1939 respectively. They are unmistakably *saueri*, being rather like *malelas* female but with the upperside apex ferruginous, (as described by Evans) and the hind wing highly dentate, almost tailed. Strangely enough, however, I took a male below Sukli at the same time, without the 'tail', but definitely *saueri*.

Elymnias peali Wood-Mason.

I took about a dozen specimens of this species, mostly males, chiefly in fair condition but some not worth keeping, in the forests below the Umran Gate, on the Shillong-Gauhati Road, Khasia Hills, Assam, at about 2,000 ft. in April 1933, whence I believe it has not been previously recorded. Its known range appears, however, to be extending, as Bingham gives it only from Sibsagar and Margherita, Assam, Evans from 'Assam' and Talbot from Assam.

and N. Burma. Mr. C. B. Antram has informed me that it is widespread in Assam.

***Thauria aliris intermedia* Crowley.**

Both Evans and Talbot say that this insect is very rare (in Burma), but I found it *rather* rare in the jungles near Pathechaung, Toungoo District, at the foot of the Karen Hills, in May 1939. It was almost impossible to obtain one without the torn angles of the hindwings having been bitten off, presumably by lizards. When they settle, the butterflies sit very close and are difficult to see and to walk up among the rustling fallen leaves which they usually choose as resting places; they also seem to favour awkward spots below shrubs. It is apparently when thus settled that they fall a prey to lizards, escaping without serious damage and torn hindwings. Lizards similarly damage the hindwings of many species in S. Burma—very exasperating to the collector!

***Discophora sondaica* zal Westwood.**

Both Evans and Talbot record this insect only from Sikkim to Burma, yet it is not uncommon in and near Calcutta, especially in bamboo copses, but it can occasionally be found even in the centre of the city, e.g., I took one female in the Bengal Club and two females in a flat in Russell Street.

***Discophora timora timora* Westwood.**

Both Evans and Talbot record this insect from Bengal, but I have never seen it near Calcutta.

***Acraea violae* (Fabricius).**

Evans rightly records this insect from Ceylon and India, while Talbot gives its habitat as Ceylon and Peninsular India. It occurs commonly in Calcutta and Hyderabad (Deccan) and more rarely in Cawnpore, but I never found it in the Punjab. Its distribution would probably be more correctly described as Ceylon and India south and east of the Punjab.

***Prothoe franckii angelica* Butler.**

I only came across two or three examples of this insect, and only in the Dawna Hills and near Tavoy. They all settled on sweet exudations on the trunks of trees, and always upside-down. One would fly rapidly round the tree and suddenly settle on its trunk head downwards; there was no question of it settling in the normal upward position and then turning over. How it achieved this aerobatic feat, I was unable to observe. When settled, it resembled very closely a piece of loose lichen on the bark of the tree. I was unable to ascertain whether its congener, *calydonia belisama* Crowley, behaved in a similar manner, as I only succeeded in catching one, a damaged male, which settled on a piece of durian fruit I had put down as bait, on a path in a forest near Pathechaung, (Toungoo District), and would not budge from its feast even when I lowered my net over it.

Euthalia garuda garuda Moore.

I found this insect quite common in the jungles near Pathechaung and took a number of females, some of which are very different from the normal females. They do not appear to be females of *merita eriphyle* De Niceville and I am hoping that one or more of them may prove to be the females of *mahadeva binghami*, (of which a rather worn male was taken by Mr. W. C. Carrot while we were collecting together for a few days at the beginning of May, 1939), or of *kanda elicius* De Niceville, the females of both of which Evans states are unknown.

Euthalia dunya Doubleday & Hewitson.

I should think that this species is the most difficult of all forest butterflies from our region to catch. It is even more wary than *evelina derma* Kollar. Like that insect, it sits facing the would-be captor on the tip of a leaf, usually within reach, and watches him keenly, waving its antennae meanwhile. It will allow him to strike before flying, but when one thinks one has it and it seems to be actually in the net, it is almost invariably only visible through the bag and on its way rejoicing to an inaccessible perch. I saw a few in the Tavoy District in March 1939 but was only able to capture a pair so elderly and ragged as scarcely to be able to fly.

Liminitis procris undifragus Frühstorfer.

This subspecies is recorded by Evans from S. India, while the race *procris* is said to occur from Dehra Dun to Burma. What exactly that means I have often wondered, but I presume it implies the arc of an imaginary circle covering the foot-hills of the Himalayas stretching between those two places, and not the segment of the circle. If I am correct, the latter race is not recorded from Calcutta, but I have taken it there not uncommonly and have bred it there from larvae found on several occasions. A comparison of these specimens with specimens taken in S. India and Sikkim demonstrates that the Calcutta form is *procris procris*. The favourite food-plant of the larvae appears to be several species of the ?Padam tree, (I am not quite sure of the name, but it has pendulous spheres of florets of a greenish colour).

Neptis columella nilgirica Moore.

Evans records this insect from S. India only, but I have taken a few, in March of several years, in the Botanical Gardens at Sibpur near Calcutta. It should therefore be recorded from Bengal.

Neptis yerburii sikkima Evans.

Its habitat is given by Evans as Sikkim to Assam. Here again I have found the subspecies, in wooded country near Tollygunge, Calcutta, rarely, and there is no doubt that these specimens were *sikkima*. It should be recorded as very rare, from Bengal also.

Kallima inachus huegeli Kollar.

Evans gives its range as Pachmarhi, and Kashmir to Kumaon. I took one or two specimens in poor condition at Taptapani, (E. Ghats,—Berhampur District,) and a fresh specimen was given to me by a friend, which flew into his carriage on a train in the ghat country near Gaya. The distribution of this subspecies is therefore considerably wider than that shewn by Evans, and may perhaps be described as across Central India to Orissa and N. Madras, and Kashmir to Kumaon.

Precis iphita pluviatalis Frühstorfer.

To the habitat of this insect given by Evans, viz.: 'Ceylon; S. and Central India'; should be added Calcutta, where I have taken it rather rarely on several occasions and am satisfied that it is the race *pluviatalis*.

Precis iphita siccata Stich.

Distribution according to Evans 'Kashmir to Kumaon,' but I have come across it very rarely in Cawnpore, U.P., so that it may occur in the United Provinces generally in favourable localities.

Precis iphita iphita Cramer.

This insect is, perhaps, Public Enemy No. 1 to collectors, to whom it can be a positive nuisance, from its habit of sitting on leaves on bushes in favourite beats of butterflies and chasing away all other butterflies which venture near it—usually especially the rarities one is particularly anxious to capture. *Atella phalanta* Drury, is another of the worst offenders in this respect.

Argynnis hyperbius hyperbius Linnaeus.

Recorded by Evans from Mt. Abu, Baluchistan, Chitral to N. Burma. I have taken this insect in Amritsar (Punjab), Cawnpore (U.P.), where I also bred it from larvae found on pansies in my garden. Also Thandaung (Karen Hills) which are really situated in Lower Burma. The range of the subspecies should therefore be extended to cover the Punjab, the United Provinces and the northerly parts of Lower Burma.

Dodona henrici longicaudata De Niceville.

I was fortunate enough to discover this insect, which is described as very rare, in fair numbers, more or less freshly emerged, below the Umran Gate on the Gauhati-Shillong Road, at about 2,000 ft. in March 1933. Among them were a few females, hitherto unknown. They were all, of course, Dry Season Forms, but I subsequently received one or two wet season males from the same locality, taken in August, which are darker and more heavily marked. I append a description of the D.S.F. form of the female:—

Resembles the male, but the fore wings are broader and the apex blunter, the termen being straight or even slightly convex, whereas in the male it is normally slightly concave. The black

markings are greatly reduced, the basal markings on both wings being light greyish instead of dark brown, while the greenish-white discal band is very broad and the whitish markings on the postdiscal half of the wings are much enlarged and prominent, with white sub-marginal lines from tornus to vein 2 on the forewing and more or less complete on the hindwing. Underside similar to that of the male, but with the whitish markings enlarged and prominent. The tail is longer than in the male and the black at the extremity of the lobe is crowned with the ground colour.

I took one female in which the whole of the upperside is greenish white, except for a slight grey dusting basally and, on the forewing, a black spot on the costa just beyond the cell, a postdiscal fascia from the costa to vein 4 and a black margin from the costa, decreasing in width gradually, to the tornus. On the hindwing, the black markings are almost confined to the anteciliary fine lines. In fact, this female shows a close approach to the dry season form of the female *henrici deodata* Hewitson, from Burma.

Abisara echerius suffusa Moore.

I have not seen any account of crepuscular habits of this butterfly, so that, in Pachmarhi in early August 1945, as I was returning to my hotel after an afternoon's collecting, (when the rain permitted), I was surprised to see several specimens, of both sexes, flying round some bushes in the gathering dusk. I took one or two, to make sure I was not mistaken in my identification; I watched them gambolling around until it became so dark that I could only see an occasional flirt of their wings. It would be interesting to know whether such crepuscular flight has been seen by other collectors.

Gerydus boisduvali assamensis Doherty.

Collecting one October afternoon in the compound of a disused house off the Kathgodam—Naini Tal road at about 4,000 ft., (now, I believe, used as an apiary), I was intrigued to find a few of these insects flying around with their characteristic falling and rising, Geometer moth-like flight. There is no discernible difference between these specimens and those I took in Sikkim, Assam and Burma, and Brigg. Evans, to whom I showed them at the British Museum, was not surprised to hear that the subspecies had turned up in Kumaon. He records it only from Sikkim to Burma.

Everes parrhasius parrhasius Fabricius.

Evans gives its habitat as Ceylon and S. India. I have found it in Hyderabad (Deccan) and very rarely in Cawnpore, U.P. It looks therefore as if it occurred throughout India as far as the United Provinces, but not, apparently east of them, as I have not come across it in Calcutta or Behar.

Megisba malaya thwaitesi Moore.

Evans records this subspecies as occurring in Bengal. This is the tailless form, but the few I have taken in Calcutta are all tailed, and are therefore race *sikkima*, which Evans records from Kumaon

to Burma. The habitats of these two races seem to require revising in the light of the above.

***Lycaenopsis ceyx cerima* Corbet.**

I took three specimens of a small, bright blue *Lycaenopsis*, one near Tavoy and two near Mergui, in S. Burma, early in 1939, which I could not ascribe to any of the members of this genus described by Evans. I therefore took them up to him for identification and after considerable search through the genus in the main collection in the British Museum, we discovered one rather battered specimen, taken some years ago by Brig. Evans himself in Burma, which agreed superficially with my specimens; it was a subspecies of *ceyx*. *L. ceyx tanarata* Corbet occurs very rarely in Malaya and Evans's specimen was the only previous one taken in Burma. This and mine were later named *ceyx cerima* by Corbet. Subsequently Sir Keith Cantlie received a specimen from Assam, which was identified as belonging to the same subspecies, and the identification of Evans's, my and Cantlie's specimens as *ceyx cerima* was confirmed by an examination of the genitalia. Cantlie's specimen was collected by Dr. T. Norman, of Seleng Tea Estate, who described it on p. 515 of the *JBNHS*, Vol. 51 (2) April 1953, under his notes on the Lepidoptera of Assam. But, as I had already prepared a description of the male, I append it here.

Shape of the wings normal, with the apex of the forewing rather rounded. Upperside glistening caerulean blue with black borders, those on the forewing decreasing in width from about 2 mm. at the apex to a thread at the tornus, and those on the hindwing a thread with a very slight broadening at the apex. Slightly paler, especially when viewed sideways, beyond the cell in interspaces 2 and 3 of the forewing and with long white patches distally in interspaces 6 and 7, extending slightly into 5, on the hindwing.

Underside very pale grey, all the spots black, those on the forewing being perhaps streaks rather than round spots, set slightly obliquely, nearer the margin than the end of the cell, that in 6 slightly and that in 7 strongly shifted inwards. Hindwing with no spot in the extreme base of interspace 7 or near the base in 1 b.; markings prominent, the rounded spot in 7 larger than the rest, the discal spots in 4 and 5 very faint or missing, the discal series placed rather nearer to the end of the cell than the margin.

Ceyx cerima must now be included in the genus *Lycaenopsis*, among the butterflies of India and Burma, in the *Haraldus* group, after *chelaka lenya*, nov., with Assam and lower Burma as its distribution and very rare as its occurrence.

I presented one of my specimens to the British Museum.

***Lycaenopsis lavendularis limbata* Moore.**

Evans gives the habitat of this insect as S. India to Bengal, but. I have never come across it in Calcutta.

I accept the revision of the names, etc., of certain species and subspecies of this genus made by Brig. Evans recently and published as a Miscellaneous Note in the Society's journal, August 1953.

I was, however, doubtful about his sinking of *lilacea* Hampson from S. India in *puspa* Frühstorfer, as I have specimens of typical *puspa gisca* Frühstorfer which I took in the wet season in the Nilgiris, and of *lilacea*, which I took during the monsoon at the foot of the Gudalur Ghat, on the Mysore Road, in the same range of hills. These latter agree with Evans's key, in that the inner edges of the spots on the underside of the forewing in interspaces 2 to 5 lie on an even arc; their general appearance is also very different from that of the *puspa* specimens. Evans has, however, recently assured me that he only decided on this sinking after it was established by examination of the genitalia that the two are conspecific. It seems likely, therefore, that my, and probably others', supposed specimens of *lilacea* are extreme wet season forms from low altitudes in areas of heavy monsoon rainfall.

I entirely agree with his objection to the modern tendency to split up easily recognised natural groups into numbers of genera. Talbot also, I observe, prefers retention of reasonably large genera for homogeneous species, dividing them, where desirable, into species groups, therein following Evans.

***Lycaenopsis musina musinoides* Swinhoe.**

I have one specimen taken in the Tista Valley, Sikkim, which can, I believe, only be this subspecies. The arrangement of the spots on the underside tallies with Evans's description and it has the peculiar, elongated, triangular androconia, which have, however, 14 to 17, and not 13, ribs.

***Lycaenopsis argiolus sikkima* Moore and *jynteana* De Niceville.**

Evans's Miscellaneous Note above quoted treats *sikkima* as a synonym of *argiolus jynteana*, with which determination I agree.

***Polyommatus loewii sanoga* Evans.**

I took a female in poor condition near Doyan, Astor, which Evans identified for me as this subspecies. He only records it from Chitral, but it should now be recorded as occurring in Gilgit also.

Polyommatus orbitulus

I took series of this species on the Rajdiangan Pass, north of Tragbal, Kashmir, at nearly 12,000 ft., on the Burzil Pass, N. Kashmir at about 13,500-14,500 ft., and also in the Bringi Valley and on the Diniaspur Pass, from 11,000 to 14,000 ft., SE. Kashmir, in 1939. I took a number of these to the British Museum and Brig. Evans kindly helped in their identification. The series from the Himalayas in the British Museum are not well arranged and have not been dealt with or rearranged for years. It seemed, however—after careful comparison with the material available there—most probable that the Rajdiangan and Burzil specimens were race *jaloka* Moore, with which they appeared more or less to agree, although they shewed some affinity with the Chitral race *walli* Evans, and that the SE. Kashmir specimens were race *ellisi* De Niceville, although, in his 'Identification', Evans records this race from Pangit,

as they have, like that subspecies, white spots below. The Indian races of this species therefore seem to require revision and a re-grouping of their habitats.

***Polyommatus icarus chitralensis* Swinhoe.**

This insect is recorded by Evans only from Chitral but I found it common along my route to the Baroghil Pass, commencing at Bunji, at about 4,000 ft., in the dry, hot, Indus Valley, and again at Gilgit, at 5,000 ft. and, in suitable localities thence to the Shandur Pass, at *ca.* 12,000 ft. and slightly over, and to the Baroghil Pass, in Chitral, at about 12,000 ft. My specimens from the higher localities appear to be generally larger, with more pointed forewings and much paler below, the spots tending to obsolescence. Brig. Evans, however, assured that my specimens from the Gilgit Wazarat were undoubtedly *icarus chitralensis*. Gilgit must therefore be added to the distribution of the subspecies.

***Polyommatus poseidion florenciae* Tytler.**

This is listed by Evans as very rare, and he told me that very little is known about the subspecies. It may therefore be of interest to know that I took a few near Gazan in NE. Chitral, in the second half of August, 1939, at about 11,000 ft. I also came across one or two more in ravine country 3 or 4 miles short of the Baroghil Pass, at about 11,000 ft., a week or so later. Unfortunately they were all more or less worn, or I could have taken and kept a fair number more. It would appear that they emerge towards the beginning of August, in those localities.

***Euchrysops contracta contracta* Butler.**

I found this insect common in Cawnpore, where it has broods in the spring, the rainy season and the late autumn and early winter. The U.P. should therefore be added to its recorded distribution, viz:—S. India to Sind; Baluchistan; N.W.F.P., and Punjab.

***Euchrysops pandava pandava* Horsfield.**

In Bengal, at any rate, this insect occurs in 4 seasonal forms. The wet season form is large and dark, with all the markings beneath coarse and prominent. The autumn form is small and pale below with the spots nearly of the ground colour. The winter form has a broad dark discal band beneath, the females having the blue on the upperside very extensive, in some cases only narrowly bordered terminally with black. The spring form is very like the autumn form, save that the spots on the underside are a little more conspicuous and darker than the ground colour generally.

***Lycaenesthes emolus emolus* Godart.**

Evans records this insect only from S. India and Sikkim to Burma, but I found it fairly common in Calcutta and it probably occurs thence northwards through Bengal to Sikkim.

Lycaenesthes lycaenina lycaenina Felder.

The distribution given by Evans is Ceylon; S. India; Orissa. I have taken it very rarely near Calcutta, but only—to the best of my recollection—in the Botanical Gardens, Sibpur.

Orthomiella pontis pontis Elwes.

I have only come across this insect between Singhik and Chungthang in the Tista Valley, Sikkim, at about 4,000-5,000 ft. It seems to enjoy settling on wet, muddy patches on the 'kutchas' bridges over mountain torrents, (Could this predilection have influenced the choice of its specific name?) and on rocks bordering the torrents, where it gets sprinkled by the spray.

Nacaduba noreia noreia Felder.

I took one or two males in Maymyo, Upper Burma, and also at mile 75 on the Tavoy-Ye Road; this is just south of the border between the Tavoy and Moulmein Districts of S. Burma. S. Burma should therefore, be included in its habitat. In addition to the clues given in Evans's key, the following points of difference may help to distinguish the males of this subspecies from the males of *L. dubiosa indica* Evans and *sivoka* Evans. Forewing longer proportionally to the hindwing; termen straighter and apex more pointed. Dark borders on the upperside of both wings broader and more conspicuous. Underside more uniform grey-brown and the spot in interspace 2 of the hindwing smaller. A sturdier insect generally.

Lycaena kasyapa var. **zariaspa** Moore.

I have only taken this 'variety' at about 9,000 ft. and upwards, and the typical form from 6,000-8,000 ft. It seems possible, accordingly, that *zariaspa* is really a high altitude subspecies of *kasyapa* and not merely a variety or form of that insect. It would be interesting to know whether the experience in that respect of other recent collectors agrees with mine and whether the evidence for the treatment of the two as valid subspecies is now sufficient.

Heliophorus brahma mogoka subsp. nov.

I have a couple of males of this insect from Kalaw, Southern Shan States. The habitat should therefore be extended to include these states.

Heliophorus androcles moorei Hewitson.

Presumably Evans, by the words 'Sikkim, Chumbi.' (note the comma and fullstop), in his distribution of this subspecies, intends to imply that it is only found in the Chumbi Valley in Sikkim, (as far as Sikkim is concerned), but, apart from the fact that that valley lies in SE. Tibet, the race occurs fairly commonly in the Tista Valley in Sikkim, at about 4,000-5,000 ft. Sevastopoulo informed me that he had taken it not uncommonly in the Darjeeling District. Its habitat should therefore be amended accordingly.

Strymon mackwoodi Evans.

Evans records this species from Manipur and the N. Shan States only, but I have a small series from Kalaw, in the S. Shan States, where I was advised that it is not very scarce. Its habitat should be extended accordingly.

Thecla vittata Tytler.

My collector sent me three males from near Chungthang in Sikkim, at about 5,500 ft., which I could not match with *duma duma* Hewitson, which appeared to be the only subspecies of the genus like mine recorded from Sikkim. I therefore took my specimens to the British Museum and shewed them to Brig. Evans. We found that they seemed nearest to *vittata* Tytler. Brig. Evans extracted the genitalia from one of my specimens and one of the Museum specimens, and after careful microscopical examination, pronounced them to be identical. It therefore follows that *vittata* must be recorded from Sikkim also, as well as from Manipur and the Naga Hills. The only superficial differences we could see between the two specimens was the fact that in mine the basal line in interspace 7 did not cross the cell, as in Evans's key, but, as he says there, the cell portion may be obsolete.

Chaetoprocta odata Hewitson.

In my specimens from Kumaon, taken in the second half of May, the several bands on the underside are filled in with yellowish-brown and are equally prominent, whereas those taken by me in N. Kashmir, (Astor, Gilgit, etc.,) in July have only the post-discal band underside forewing so filled in and prominent. Also the purple colour on the upperside is paler and more greyish in the Kumaon specimens. These differences appear to be seasonal, a spring or dry-season form in May and a wet-season form, (although the rainfall in N. Kashmir is rather scanty,) or a second brood, in July. Incidentally, I had never found this insect common until I came across a walnut tree at the southern approach to Doiyan, (Astor), at about 8,000 ft., literally defoliated by its larvae and the newly emerged butterflies absolutely swarming all over the tree and the surrounding grass! [*vide* Vol. 47 (4) p. 571].

Iraota timoleon timoleon Stoll.

Although the females are normally purple with broad borders, on both fore and hind wings, on the upperside, I have a female taken in Calcutta, where this insect occurs rarely, especially in the neighbourhood of Banyan trees, with the purple on the forewing very much restricted and the hindwing plain brownish-black.

Amblypodia ? agesilaus Staudinger.

I took a butterfly below the Sukli rest-house, in the Dawna Hills, S. Burma, in November 1938, which seems to belong to the *Epimuta* group, as it has the discal spots in 5, 6 and 7, on the underside of the hindwing with their centres in line and more or less rounded,

and has no well-defined basal dark area below the cell on the under-side of the forewing. I shewed this specimen to Brig. Evans at the British Museum, but, although we searched all through the *Amblypodias* in the collection there and his book of illustrations of all the known *Amblypodias*, we could find nothing like it. Brig. Evans considered it to be an entirely new species, but opined that, after Corbet's death, there was none at the British Museum competent to determine what the insect actually is. I append a description:—

'Tailless. Upperside: a rather soft heliotrope blue, with a slight sheen in a side light. Forewing, black border 1 mm. at tornus expanding to 2 mm. at vein 1 and increasing regularly to 3 mm. at the apex, continuing along the costa for about half the length of the wing. Hindwing, border about 1 mm., with a fine anteciliary pale blue line from the tornus to vein 3.

Underside: Purple brown, with large, separated, white-circled spots, the brown colour paler on the lower part of the forewing. Forewing discal band of round separate spots completely broken at vein 4, the inner edge of the spot in 4 joining the outer edge of the spot in 3, the band not continued below vein 1. Hindwing, the shape of the inner discal spots very irregular, the spots in 5, 6 and 7 in echelon, as usual, the inner edge of the spot in 5 meeting the outer edge of the spot in 4, the spots rounded and separated, not continued below vein 1. A double wavy line, becoming angled inwardly towards its upper end, distal to the discal band, bordered exteriorly in 1 b and 1 by light blue scales.'

***Amblypodia adatha regia* Evans.**

Recorded by Evans from Mergui only but I took a pair in Tavoy. Its range may therefore extend from Tavoy to S. Burma.

***Amblypodia centaurus pirithous* Moore.**

Recorded by Evans from Kumaon to Assam, with occurrence 'not rare'. I took what I first thought to be a dull and worn specimen of *A. amantes amantes* Hewitson, which proved on examination to be *A. centaurus pirithous* Moore, surely an unusual habitat for an insect which is normally confined to the foot-hills of the Himalayas and Assam. This was the only specimen of this insect which I found near Calcutta, but at times it is common in the plains of N. Bengal adjoining the Himalayas,—for instance along the road from Siliguri to the Tista Valley, in the outer parts of which it sometimes swarms in such numbers as to be a positive nuisance. I have also taken it on Senchal near Darjeeling at about 8,000 ft., rather to my disappointment, as when I saw a few large *Amblypodias* flying around a tree there, at that altitude, I expected them to be something new to me and rare!

***Amblypodia adriana* De Niceville.**

Evans gives its habitat as Sikkim to Shan States, but I took a rather worn male on a stream bed about 5 miles from Kathgodam along the Naini Tal road, in Kumaon, in March 1932. Its range should therefore be extended to include Kumaon.

Amblypodia areste arestina Evans.

To the habitat of this insect given by Evans, viz., N. and S. Shan States, must be added Karen Hills, as I took a female in Thandaung in those hills, at about 4,000 ft., in May 1939.

Surendra amisena Hewitson.

Its distribution is given by Evans as Tavoy to S. Burma, but I took it in the Dawna Range, almost due east of Moulmein, in April 1939. S. Burma, would therefore be a better description of its distribution.

Spindasis lohita lazularia Moore.

This butterfly occurs very rarely in Calcutta, so that its distribution should be amended from 'Ceylon: S. India,' as shewn by Evans, to 'Ceylon: S. India and lower Bengal.' Incidentally, I observe that Evans, in his introduction to the 2nd edition of his 'Identification', on page 22, states that India may be regarded as falling into certain divisions, one of which is S. India. This, he says, embraces the entire Madras and Bombay Presidencies and extends throughout the plains of India. I seem to remember, also, that in the first edition, he said that Bengal seemed in some respects to belong to the S. Indian region. With the latter remark I agree generally, especially as far as lower Bengal is concerned but it is difficult for the ordinary man to envisage the United Provinces and the Punjab, for instance, as part of S. India, whatever their geological formation. I therefore prefer to regard S. India, from the point of view of the distribution of butterflies, as roughly the equivalent of Peninsular India, or as running approximately from a line from Cutch to the northern tip of Orissa, southwards. As regards lower Bengal, it will be observed from the foregoing that a fair number of the local butterflies belong to the S. Indian races, but there are, also, a few, which seem to have crept down from the Himalayan foot-hills, belonging to the NE. Indian subspecies.

Zesius chrysomallus Hübner.

Habitat shewn by Evans as Ceylon; S. India to Orissa. It occurs also rarely in and near Calcutta, where I have taken a few, all but one being females, mostly in the Botanical Gardens, Sibpur. My collecting visits to these gardens, were almost entirely confined to Sunday and holiday mornings, but the male was captured one afternoon. Does it fly only in the afternoons?

Pratapa blanka argentea Aurivillius.

Evans gives its habitat as Sikkim to Dawnas. I took one male on Tavoy Hill in February 1939; its range is therefore probably Sikkim to Tavoy.

Pratapa deva deva Moore.

Evans gives the distribution of this insect as Ceylon; S. India to C.P. To this must be added Calcutta, as I have taken it very rarely there, but only in December and January.

Pratapa deva lila Moore.

This subspecies I took in Tavoy; its habitat should therefore be revised from 'Mussoorie to Dawnas' to 'Mussoorie to Tavoy'.

Pratapa cleobis Godart.

This species also occurs in Calcutta, where I have found it very rare in the cold weather. Evans gives the distribution as S. India. Dun to Dawnas, which presumably does not include lower Bengal.

Charana jalindra indra Moore.

I have taken this insect very rarely in Calcutta, whence Evans does not record its occurrence. According to him, it is found only in Orissa and Sikkim to the Dawnas.

Charana cepheis De Niceville.

I took one male and one female, at Umran, on the Gauhati-Shillong Road, in March 1933, at about 2,000 ft., which are apparently this species. They are, of course, dry season forms, but they differ considerably, especially on the undersides, from Evans's description, (which may be based on wet season forms). The ground colour on the underside in the male is pale yellow and in the female greyish. The discal band is ferruginous-brown, very much narrower and more macular than in *mandarinus* Hewitson, and beyond that the marginal area is paler, with a subterminal similar very narrow band, (scarcely visible in the male) and some faint marginal markings. On the upperside, the female has the discal area slightly paler with a bluish tinge outwardly, on the forewing, and the tornal 'white' area on the hindwing is dull blue, (as in the male, but paler).

Horaga amethystus H. H. Druce.

In Pataw Island, opposite Mergui, in early 1939, I took a pair of *Horagas*, which I could not match with any of those listed by Evans. I therefore took the specimens to him for identification and, by searching through the genus in the collection at the British Museum, we discovered that they were undoubtedly *amethystus* and in all probability race *purpurascens* Corbet, hitherto only recorded very rarely from Malaya. In the British Museum were only one male, the type, and three females, one of which is the paratype. I append a description:

Male. Sex mark similar to that of *onyx* Moore and *moulmeina* Moore, but inconspicuous. Upperside deep violet purple with narrow, even, black borders on both wings, the usual white patch on the forewing minute. Female. Upperside similar, the black border and increasing to the apex of the forewing and reaching inwardly the white patch which is larger than in the male. Underside, male and female, uniform dull ochreous, with the usual white fasciae, which are very narrow on both wings and the usual irroration and metallic green markings tornally on the hindwing, where these markings inwardly border the white fascia.

This subspecies should therefore be included in the butterflies of our region, as occurring at Mergui in S. Burma, very rarely.

Chliaria othona Hewitson.

Distribution as given by Evans 'S. India, Dun to Burma'. It occurs however, rarely near Calcutta, where I have found a few, chiefly in the Botanical Gardens at Sibpur, on and around the *Kleinhovia hospita* trees. I suspect that this tree may supply the food-plant of the species, and often examined the leaves, flowers and fruit of the tree but never succeeded in finding any larvae which might have been *othona* caterpillars.

Deudorix epijarbas epijarbas Moore.

Evans records its habitat as Ceylon; S. India to Orissa. I have found it very rare in Calcutta and can see very little difference between the Calcutta specimens and specimens from Kumaon and Simla District, but, as the subspecies *epijarbas* is recorded from as near as Orissa, I consider it probable that the Calcutta forms are race *epijarbas*. More material is probably required to determine this point, however.

Rapala abnormis Elwes.

Evans gives its distribution as Karens to S. Burma, rare, and says that the female is unknown; there was no female of this species in the collection at the British Museum, in August 1950, when I asked Brig. Evans whether his statement still held. I received a female, however, in a parcel of butterflies collected by Mr. W. S. Wood, of the Widnes tin mine, about 40 miles nearly due east of Tavoy, S. Burma, in November 1939. I append a description:

Female. Closely resembles the male, but the upperside is not, as in the male, shot with brilliant purplish-blue. Underside similar to that of the male. The wings are rather broader, especially the forewing, and less acuminate. Upperside dull purplish-blue, semi-transparent, with a steely-blue suffusion proximally in certain lights.

Rapala varuna lazulina Moore.

Recorded only from Ceylon and S. India. I have, however, taken it very rarely in Calcutta; possibly it is not actually so scarce, but is inclined to be overlooked, owing to its similarity, especially on the wing, to *schistacea* Moore, with which it flies. The females of the two species are extremely difficult to distinguish with certainty. One or two of the few specimens of *varuna* I took in Calcutta seem to approximate to subspecies *orseis* Hewitson, recorded from Sikkim to Burma. But, on the whole, I consider the Calcutta race is *lazulina*.

Rapala pheretimus petosiris Hewitson.

Habitat Sikkim to Burma, according to Evans, but I have taken it fairly commonly in the Botanical Gardens at Sibpur, near Calcutta, where it flies in April. I did not find a wet-season form there.

Rapala dienece dienece Hewitson.

On the other hand, I have not come across this insect in Calcutta, although Evans records it from Bengal.

Rapala melampus Cramer.

Evans gives the distribution as Ceylon; S. India to Orissa; Murree to Kumaon. But it would probably be nearer the actuality to shew it as 'Ceylon; India to Murree and Kumaon,' as I have taken it very rarely in Calcutta and less uncommonly in Amritsar and Cawnpore.

BRAMBLE LEA, MARESFIELD PARK, SUSSEX,
September 9, 1954.

REFERENCES

1. The Fauna of British India. Butterflies. 1st edition. By Lt.-Col. C. T. Bingham.
2. The Fauna of British India. Butterflies. 2nd edition. By G. Talbot, F.R.E.S.
3. The Identification of Indian Butterflies, 2nd edition. By Brig. W. H. Evans, C.S.I., C.I.E., D.S.O., etc.